

Further Mortality Experience Among Japanese Americans

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MORTALITY experience of the Japanese, whether resident in Japan, Hawaii, or the continental United States, has differed from that of white persons in the United States in a number of respects (1). Differences in cardiovascular mortality were especially striking. Japanese had lower death rates for diseases of the heart than did white Americans, but higher rates for vascular lesions affecting the central nervous system. These comparisons were made on the basis of data through 1950. Data for a decade later are now available.

Data on Japanese deaths in the United States, 1959-61, came from a special tabulation by the Division of Vital Statistics, National Center for Health Statistics, Public Health Service. Population counts for 1960 came from the 1960 census, specifically PC (2)-IC (nonwhite population by race), Bureau of the Census, Department of Commerce. Data on immigration from Japan by age and sex for the years 1950-60 were supplied by the Immigration and Naturalization Service, Department of Justice. Mortality statistics for Japan, 1961, came from the World Health Organization's Annual Epidemiological and Vital Statistics, 1961.

Demographic Characteristics

In 1952 there was a liberalization of the rules governing the immigration of Japanese into the United States and a large increase in the movement of Japanese to this country. Prior to that there had been an extended period of little or no immigration. Between July 1, 1950, and

June 30, 1960, more than 45,000 Japanese were admitted to the United States. Nearly 39,000 of these were women, the large majority of them in their twenties. There was only a trickling of immigrants over age 35.

The large increase in population between the two censuses was accompanied by a change in the method of designating race, from an enumerator decision in 1950 to self-enumeration in 1960. There is always some concern that different methods of collecting data may lead to different results. However, immigration and the excess of births over deaths were sufficient to account for all but a small part of the difference between the 1950 and 1960 census counts.

In 1960, 82 percent of all Japanese in the United States were urban residents. This represented a moderate increase in urban residency from 1950. The total Japanese population in this country increased more than 40 percent during the decade, the increase being less in Hawaii than in the continental United States. In 1960 nearly 44 percent of the Japanese American population lived in Hawaii and 56 percent on the continent; in 1950 the balance had been reversed. Nearly half of all U.S. Japanese in 1960 lived either in the Los Angeles-Long Beach or the Honolulu Standard Metropolitan Statistical Area. Of the Japanese living in the continental United States, 60 percent were in California;

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this is about the same as it was in 1950. The remainder were scattered through the other States.

As in 1950, Japanese Americans had more years of schooling than white Americans and a larger proportion were single. Their economic conditions had shifted, however. The median income for Japanese men in 1960 was about the same as that for the white population, and family incomes were higher. There had been a sharp drop in the proportion of men engaged in farming.

In 1960 the sex ratio had shifted and there were more Japanese women than men in the United States. This arose from an unusual preponderance of women in the age group 25-34 years, without which there would still be more Japanese men than women. Some 17 percent of

the men and 25 percent of the women were foreign-born, the excess for women being concentrated in the age group 25-34 years. Overall, this represents a decrease in the percentage of foreign-born Japanese, the dying off of the older generation of immigrants, and the birth of a new generation of Japanese in this country offsetting the effect of new immigration.

General Mortality

As in previous decades mortality in the United States in 1959-61 was substantially lower among the Japanese than among the white population. This was true for all age groups and both sexes (table 1). In the age groups 25-64 years the race differential was greater for men than women. Mortality for Japanese men in these age groups was about half that for white men.

Table 1. Number of deaths and death rates for U.S. white and Japanese populations and Japanese of Hawaii and continental United States, by age and sex, for specified years

Age group (years)	Males				Females			
	Japanese, 1959-61			White, United States, 1960	Japanese, 1959-61			White, United States, 1960
	Total	Hawaii	Continental United States		Total	Hawaii	Continental United States	
Number of deaths								
All ages.....	4, 432	1, 928	2, 504	¹ 860, 857	2, 330	1, 271	1, 059	¹ 644, 478
0-4.....	394	162	232	55, 472	275	114	161	40, 207
5-14.....	66	34	32	8, 255	43	22	21	5, 233
15-24.....	77	35	42	15, 063	33	15	18	5, 817
25-34.....	95	37	58	16, 221	103	28	75	8, 674
35-44.....	215	111	104	35, 139	136	68	68	21, 018
45-54.....	248	150	98	84, 963	176	116	60	42, 964
55-64.....	455	215	240	152, 430	310	155	155	79, 050
65-74.....	949	408	541	227, 995	529	263	266	150, 852
75-84.....	1, 480	555	925	193, 078	536	344	192	187, 904
85 and over.....	453	221	232	71, 974	189	146	43	102, 589
Death rate per 100,000 population								
All ages.....	644. 2	641. 8	646. 0	¹ 1, 098. 5	318. 5	410. 1	251. 2	¹ 800. 9
0-4.....	442. 7	495. 5	412. 0	626. 9	333. 9	366. 8	314. 0	472. 5
5-14.....	47. 8	50. 9	44. 8	52. 7	31. 9	34. 2	29. 7	34. 7
15-24.....	90. 6	89. 8	91. 3	143. 7	36. 1	36. 2	36. 1	54. 9
25-34.....	85. 2	89. 0	82. 9	163. 2	61. 1	54. 4	64. 0	85. 0
35-44.....	178. 5	216. 5	150. 3	332. 6	110. 1	125. 0	98. 4	191. 1
45-54.....	454. 3	500. 3	398. 3	932. 2	358. 9	420. 7	279. 6	458. 8
55-64.....	1, 143. 7	1, 182. 6	1, 111. 0	2, 225. 2	714. 8	784. 6	656. 4	1, 078. 9
65-74.....	3, 339. 7	3, 206. 0	3, 448. 1	4, 848. 4	1, 896. 5	2, 000. 1	1, 804. 0	2, 779. 3
75-84.....	9, 170. 7	9, 457. 6	8, 987. 8	12, 680. 1	7, 027. 2	7, 301. 4	6, 516. 9	9, 787. 2
85 and over.....								

¹ Includes persons whose ages were not stated.

For most age groups, Japanese living in Hawaii had slightly higher mortality than Japanese elsewhere in the United States. The largest differences were for the age groups 35-44 and 45-54 years.

Comparison of foreign-born with native-born Japanese Americans must be restricted to the age groups 45-54 and 55-64 years, where there were a sufficient number of both foreign- and native-born. In both these age groups and in both sexes foreign-born Japanese had slightly higher mortality than native-born. Most of these foreign-born were from the early wave of immigration, which ended in 1924.

The authenticity of the death rates reported for the Japanese in the United States was discussed previously (1). It was concluded that the persistence of a relatively low mortality among the Japanese Americans for many decades was a strong argument for its reality. However, the extraordinarily low rates for Japanese men reported in 1959-61 raise some questions that cannot be comfortably answered from available evidence.

One unusually high death rate for Japanese men has persisted (table 2). This is the rate for malignant neoplasms of digestive organs. A high mortality from this cause relative to that of the U.S. white population has been characteristic of Japanese populations in the past and appeared again in the data for 1959-61. However, death rates for suicide were no longer unusually high for Japanese men under age 65, as they had been in the past. The disappearance of this feature of Japanese mortality may, of course, represent a cultural change.

Cardiovascular Diseases

In 1949-52 death rates for cardiovascular causes were substantially different for Japanese than for white persons in the United States. Special attention was focused in the earlier paper on the age groups 35-64 years. For these groups, death rates for diseases of the heart were substantially lower for Japanese Americans than white Americans, while death rates for vascular lesions affecting the central nervous system (vascular lesions) were somewhat higher.

For Japanese men in Hawaii these differentials in cardiovascular mortality were even

stronger than for Japanese men in the continental United States, with lower death rates in Hawaii for diseases of the heart and higher death rates for vascular lesions. In Japan itself, mortality for diseases of the heart was very low, while mortality for vascular lesions was very high relative to rates for Japanese in the United States.

Diseases of the Heart

The contrasts in the United States for middle-aged men of different races are of special interest. The white American, like most of his compatriots in western Europe, has a remarkably high death rate for diseases of the heart. The elevation is largely due to a high mortality from coronary heart disease. Thus, it was of interest that there should be another racial group (the Japanese) living in the United States which had relatively low death rates for this cause.

No hypothesis was proposed to explain the difference in 1949-52 between the two groups in cardiovascular mortality, but the following observation was made.

... One would expect the Japanese population of the United States aged 45-54 to shift from a preponderantly foreign-born one in 1950 to a preponderantly native-born one in 1960. If this is accompanied by a large rise in cardiovascular mortality for Japanese men in this age group, and especially by a marked increase in the death rate for diseases of the heart, the inclination will be to attribute the present differentials to cultural factors. If a rise does not occur, it will be much more difficult to reach any kind of conclusion concerning the present differentials.

The reason for expecting a marked shift in proportion of foreign-born persons were the following percentages of foreign-born Japanese Americans in 1950. (The figures are for both sexes combined, but there is relatively little difference between the sexes in these percentages.)

Residence	25-34	35-44	45-54	55-64
Continental United States and Hawaii	2.2	12.2	72.1	94.1
Continental United States	3.2	20.1	85.8	94.7
Hawaii	1.2	7.3	59.0	93.7

The 1960 figures reported for Japanese in the United States as a whole show that the expected shift in nativity at age 45-54 years did occur.

Table 2. Average death rates per 100,000 population for selected causes by sex for specified age groups, Japanese in the United States, 1959-61

Cause of death ¹	Men				Women			
	35-44	45-54	55-64	65-74	35-44	45-54	55-64	65-74
All causes.....	178.5	454.3	1,143.7	3,339.7	110.2	359.0	714.8	1,896.3
Tuberculosis, all forms (001-019).....	3.3	3.7	15.1	59.8	2.4	2.0	4.6	3.6
Tuberculosis of respiratory system (001-008).....	2.5	3.7	15.1	56.3	1.6	-----	4.6	3.6
Tuberculosis, other forms (010-019).....	.8	-----	-----	3.5	.8	2.0	-----	-----
Syphilis and its sequelae (020-029).....	-----	1.8	10.1	-----	-----	-----	2.3	14.3
Meningococcal infections (057).....	-----	-----	2.5	-----	-----	-----	2.3	-----
Other infective and parasitic diseases (030-044, 049, 052-054, 058, 074, 081-084, 086-138).....	3.3	3.7	5.0	10.6	-----	-----	2.3	3.6
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140-205).....	40.7	120.9	399.7	1,069.8	31.6	136.7	207.5	419.4
Malignant neoplasm of buccal cavity and pharynx (140-148).....	1.7	1.8	10.1	-----	.8	4.1	-----	-----
Malignant neoplasm of digestive organs and peritoneum, not specified as secondary (150-156A, 157-159).....	24.1	67.8	233.8	675.7	14.6	67.3	92.2	236.6
Malignant neoplasm of respiratory system, not specified as secondary (160-164).....	9.1	9.2	90.5	200.6	-----	10.2	16.1	43.0
Malignant neoplasm of breast (170).....	-----	-----	-----	3.5	7.3	16.3	16.1	25.1
Malignant neoplasm of genital organs (171-179).....	-----	-----	5.0	28.2	4.1	22.4	53.0	60.9
Malignant neoplasm of urinary organs (180-181).....	-----	7.3	2.5	24.6	-----	-----	6.9	7.2
Malignant neoplasm of other and unspecified sites (156B, 165, 190-199).....	1.7	14.7	25.1	84.5	3.2	4.1	16.1	28.7
Leukemia and aleukemia (204).....	3.3	5.5	10.1	14.1	1.6	8.2	6.9	-----
Lymphosarcoma and other neoplasms of lymphatic and hematopoietic tissues (200-203, 205).....	.8	14.7	22.6	38.7	-----	4.1	-----	17.9
Benign neoplasms and neoplasms of unspecified nature (210-239).....	.8	1.8	2.5	7.0	3.2	-----	4.6	3.6
Asthma (241).....	.8	1.8	5.0	14.1	.8	2.0	4.6	7.2
Diabetes mellitus (260).....	4.2	3.7	22.6	80.9	-----	8.2	32.3	75.3
Anemias (290-293).....	-----	-----	2.5	3.5	-----	-----	2.3	3.6
Major cardiovascular-renal diseases (330-334, 400-468, 592-594).....	57.3	196.0	475.1	1,601.2	31.6	150.9	362.0	1,064.7
Diseases of cardiovascular system (330-334, 400-468).....	53.1	181.4	465.0	1,590.7	25.1	140.7	355.1	1,046.8
Vascular lesions affecting central nervous system (330-334).....	11.6	31.1	95.5	439.9	6.5	65.3	131.4	311.9
Diseases of the heart (400-402, 410-443).....	39.9	142.9	334.3	1,048.7	12.2	61.2	202.9	659.6
Rheumatic fever and chronic rheumatic heart disease (400-402, 410-416).....	5.0	11.0	5.0	10.6	3.2	16.3	11.5	7.2
Arteriosclerotic heart disease, including coronary disease (420).....	27.4	100.8	248.9	784.8	2.4	22.4	119.9	412.3
Nonrheumatic chronic endocarditis and other myocardial degeneration (421, 422).....	1.7	3.7	20.1	63.3	.8	4.1	4.6	46.6
Other diseases of heart (430-434).....	2.5	7.3	2.5	21.1	3.2	2.0	2.3	10.8
Hypertensive heart disease (440-443).....	3.3	20.2	57.8	168.9	2.4	16.3	64.6	182.8
Other hypertensive disease (444-447).....	.8	-----	7.5	17.6	1.6	8.2	4.6	43.0
General arteriosclerosis (450).....	-----	-----	5.0	24.6	-----	-----	2.3	17.9
Other diseases of circulatory system (451-468).....	.8	7.3	22.6	59.8	4.9	6.1	13.8	14.3
Chronic and unspecified nephritis and other renal sclerosis (592-594).....	4.2	14.7	10.1	10.6	6.5	10.2	6.9	17.9
Influenza and pneumonia, except pneumonia of newborn (480-493).....	.8	7.3	15.1	70.4	2.4	6.1	13.8	39.4
Influenza (480-483).....	-----	1.8	-----	3.5	-----	-----	4.6	3.6
Pneumonia, except pneumonia of newborn (490-493).....	.8	5.5	15.1	66.9	2.4	6.1	9.2	35.9

See footnote at end of table.

Table 2. Average death rates per 100,000 population for selected causes by sex for specified age groups, Japanese in the United States, 1959-61—Continued

Cause of death ¹	Men				Women			
	35-44	45-54	55-64	65-74	35-44	45-54	55-64	56-74
Bronchitis (500-502)-----			2.5	7.0		2.0		
Ulcer of stomach and duodenum (540, 541) -	1.7	9.2	15.1	28.2		2.0	4.6	17.9
Appendicitis (550-553)-----				3.5	.8			
Hernia and intestinal obstruction (560, 561, 570)-----			2.5	21.1	2.4	2.0	4.6	3.6
Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn (543, 571, 572) -	.8		5.0	10.6	.8		2.3	7.2
Cirrhosis of liver (581)-----	2.5	9.2	27.7	45.8	1.6	6.1	9.2	25.1
Cholelithiasis, cholecystitis, and cholangitis (584, 585)-----		1.8	2.5	21.1				10.8
Acute nephritis, and nephritis with edema, including nephrosis (590, 591)-----		1.8		3.5	.8	2.0		
Infections of kidney (600)-----	.8	1.8	7.5	17.6	1.6	2.0	6.9	10.8
Deliveries and complications of pregnancy, childbirth, and the puerperium (640-689)-----					3.2			
Other complications of pregnancy, childbirth, and the puerperium (640-649, 660-689)-----					3.2			
Congenital malformations (750-759)-----		1.8			1.6	2.0		3.6
Symptoms, senility, and ill-defined conditions (780-795)-----	2.5			7.0	.8			7.2
All other diseases (residual)-----	5.8	23.8	30.2	133.7	8.1	14.3	16.1	78.9
Accidents (E800-E962)-----	35.7	40.3	50.3	84.5	9.7	14.3	18.5	64.5
Motor vehicle accidents (E810-E835)-----	10.0	20.2	17.6	38.7	3.2	12.2	6.9	25.1
Other accidents (E800-E802, E840-E962) -	25.7	20.2	32.7	45.8	6.5	2.0	11.5	39.4
Suicide (E963, E970-E979)-----	14.9	22.0	42.7	38.7	6.5	6.1	13.8	32.3
Homicide (E964, E980)-----	2.5	1.8	2.5					

¹ Numbers after causes are category numbers of the seventh revision of the International Lists of Diseases and Causes of Death.

NOTE: There were no deaths in these age groups for the following causes: dysentery, all forms (045-048); scarlet fever and streptococcal sore throat (050-051); diphtheria (055); whooping cough (056); acute poliomyelitis (080); measles (085); meningitis, except meningococcal and tuberculous (340); hyperplasia of prostate (610); abortions (650-652); certain diseases of early infancy (760-776); birth injuries, postnatal asphyxia, atelectasis (760-762); infections of newborn (763-768); other diseases peculiar to early infancy, and immaturity, unqualified (769-776).

The percentage for persons 35-44 years was 8.1; persons 45-54, 14.3; and persons 55-64, 69.5. Parallel counts for individual States are not available from the 1960 census.

Since immigration of Japanese in these age groups has been very light, the shift was to be expected. However, the consistency between the 1950 and 1960 censuses lends credibility to the figures reported by both.

In Hawaii the level of mortality among Japanese men aged 45-54 for diseases of the heart remained about the same in 1959-61 (157.9 per 100,000) as in 1949-51 (160.1 per 100,000). In the continental United States it fell during that decade from 199.4 to 121.9 per 100,000 (table 3). The hypothesized change in mortality from diseases of the heart did not occur.

The earlier discussion was based on the premise that death rates for diseases of the heart were higher among native-born than foreign-born Japanese. The reason for this assumption was stated in the following terms (1).

Insofar as cardiovascular mortality among the Japanese of the United States expresses a cultural difference, the death rate from diseases of the cardiovascular system should probably be lower among the foreign-born than among the nisei.

The logic implicit in this statement is the following untested argument. Japanese who migrate to the United States are closer in culture to the people of Japan than are Japanese born in the United States. The Japanese in Japan have very low death rates for diseases of the heart. These low rates must be partly of cultural origin, since Japanese in the United States

Table 3. Average death rates per 100,000 population for all causes and specified cardiovascular causes by sex for specified age groups, Japanese and white populations around 1950 and 1960

Cause of death, ¹ and age group (years)	Japanese, Hawaii		Japanese, Conti- nental United States		White, United States		Japanese, Japan	
	1959-61	1949-51	1959-61	1948-52	1960	1950	1961	1951
Men								
All causes:								
35-44.....	216.5	199.3	150.3	293.0	332.6	380.9	330.9	555.9
45-54.....	500.3	695.8	398.3	711.5	932.2	984.5	784.3	1,055.8
55-64.....	1,182.6	1,890.1	1,111.0	1,760.9	2,225.2	2,304.4	2,052.8	2,428.3
65-74.....	3,206.0	3,987.5	3,448.1	4,077.2	4,848.4	4,864.9	5,143.4	6,075.5
Diseases of cardiovascular system (330-334, 400- 468):							(²)	(²)
35-44.....	68.3	63.3	41.9	98.9	124.4	131.2	59.4	72.8
45-54.....	196.8	231.9	162.6	261.9	471.4	493.4	252.2	241.2
55-64.....	462.0	794.9	467.5	807.5	1,251.8	1,308.7	871.6	792.9
65-74.....	1,445.9	1,975.2	1,695.3	1,992.1	2,974.5	3,025.0	2,482.8	2,210.1
Vascular lesions affecting central nervous system (330-334):								
35-44.....	17.6	12.7	7.2	22.0	11.3	13.1	30.4	30.9
45-54.....	33.4	64.2	28.5	54.7	40.9	53.7	171.6	143.5
55-64.....	93.5	300.3	97.2	230.2	139.0	182.2	615.0	524.5
65-74.....	369.3	653.4	497.1	579.4	501.0	569.7	1,695.5	1,515.3
Diseases of heart (400-402, 410-443):								
35-44.....	48.8	47.5	33.2	73.2	107.5	110.6	26.0	40.7
45-54.....	160.1	157.9	121.9	199.4	413.2	423.6	70.9	92.1
55-64.....	341.0	471.1	328.7	562.6	1,056.0	1,081.7	225.2	246.1
65-74.....	950.8	1,240.1	1,128.1	1,291.1	2,297.9	2,308.3	671.0	584.8
Arteriosclerotic heart disease including coronary disease (420):		(³)	(³)	(³)			(³)	(³)
35-44.....	29.3	31.6	26.0	51.3	86.0	77.5	18.5	29.7
45-54.....	123.4	88.8	73.2	152.5	352.5	323.1	52.0	65.4
55-64.....	242.0	300.3	254.6	464.0	901.3	812.9	151.8	160.0
65-74.....	581.5	802.0	949.7	1,083.7	1,909.2	1,608.2	414.9	344.4

have higher death rates for this cause than Japanese in Japan.

A direct examination of the assumption that differences in nativity were associated with differences in mortality was not possible from the data available for 1949-52, but it was possible for 1959-61. Unfortunately, it could not be done separately for Hawaii and the continental United States, but only for the United States as a whole. Comparisons are restricted to the age groups 45-54 and 55-64, the only two age groups with a sufficient number of both foreign- and native-born persons for such an analysis (table 4). Even here the available data are skimpy, especially for the age group 45-54 years.

For diseases of the heart there was no clear difference in mortality among Japanese Ameri-

can men between those born in the United States and those born in Japan. It would appear that the original premise for anticipating a shift in mortality from 1950 to 1960 for this group was probably unfounded.

There was a serious inconsistency in the original argument. A special point was made that the level of heart disease mortality for the Japanese in Hawaii was intermediate between that for Japanese in the continental United States and Japanese in Japan; that is, lower than that in the continental United States. At the same time it may be seen that there was a smaller proportion of foreign-born Japanese in Hawaii than in the continental United States, which, by the preceding logic, should have led to a higher heart disease mortality in Hawaii. The 1950 mortality contrast was reversed in the

Table 3. Average death rates per 100,000 population for all causes and specified cardiovascular causes by sex for specified age groups, Japanese and white populations around 1950 and 1960—Continued

Cause of death, ¹ and age group (years)	Japanese, Hawaii		Japanese, Continental United States		White, United States		Japanese, Japan	
	1959-61	1949-51	1959-61	1948-52	1960	1950	1961	1951
Women								
All causes:								
35-44-----	125.0	213.1	98.4	250.6	191.1	235.8	242.2	483.7
45-54-----	420.7	535.2	279.6	487.1	458.8	546.4	518.7	803.4
55-64-----	784.6	1,126.4	656.4	985.5	1,078.9	1,293.8	1,222.1	1,695.2
65-74-----	2,000.1	3,020.9	1,804.0	2,536.2	2,779.3	3,242.8	3,387.6	4,357.3
Diseases of cardiovascular system (330-334, 400-468):							(²)	(²)
35-44-----	29.4	62.9	21.7	49.3	42.7	60.2	46.7	78.6
45-54-----	152.3	277.0	125.8	219.8	146.7	206.6	172.6	228.9
55-64-----	410.0	597.8	309.1	450.9	512.7	642.4	534.5	625.5
65-74-----	1,216.8	1,741.0	895.2	1,570.0	1,711.2	1,999.1	1,715.1	1,715.1
Vascular lesions affecting central nervous system (330-334):								
35-44-----	9.2	21.0	4.3	22.4	10.1	13.6	18.9	29.7
45-54-----	65.3	122.1	65.2	106.2	33.8	55.0	110.8	142.3
55-64-----	151.9	220.3	114.3	199.9	103.0	156.9	365.0	415.6
65-74-----	311.8	576.5	312.0	496.5	383.3	498.1	1,159.6	1,170.4
Diseases of heart (400-402, 410-443):								
35-44-----	12.9	31.4	11.6	22.4	28.6	40.5	26.2	47.6
45-54-----	65.3	145.5	55.9	106.2	103.4	141.9	55.5	81.5
55-64-----	232.9	358.7	177.9	237.1	383.0	460.2	150.9	188.8
65-74-----	813.8	1,118.4	522.2	1,006.4	1,229.9	1,400.9	470.0	457.6
Arteriosclerotic heart disease including coronary disease (420):		(³)		(³)			(³)	(³)
35-44-----	1.8	3.5	2.9	17.9	12.7	13.2	16.7	33.6
45-54-----	18.1	46.9	28.0	47.6	61.9	66.6	35.1	58.1
55-64-----	116.4	144.7	122.8	153.4	277.6	267.5	96.0	126.5
65-74-----	471.5	576.5	359.4	711.2	916.3	838.9	284.1	285.1

¹ Numbers after causes are category numbers of the seventh revision of the International Lists of Diseases and Causes of Death.

² List numbers 330-334, 410-447.

³ List numbers 420-422.

following decade—1959-61 death rates for diseases of the heart were slightly higher in Hawaii than in the continental United States. It is difficult to draw firm conclusions in the face of such fluctuations, particularly since the populations are so small.

The dominant feature is and was the fact that heart disease of the Japanese either in Hawaii or the continental United States was intermediate between mortality in Japan and mortality for the U.S. white population. This contrast persisted in 1959-61; in fact, the difference between white and Japanese Americans in heart disease mortality was greater in 1959-61 than it had been a decade earlier.

Japanese Americans had a lower death rate than white Americans for all major categories of diseases of the heart except hypertensive heart disease, for which mortality was higher among the Japanese. White Americans had substantially higher mortality for arteriosclerotic heart disease than Japanese Americans.

Vascular Lesions

Heart disease death rates were highest in the U.S. white population, intermediate among U.S. Japanese, and lowest among Japanese in Japan. These differentials were clear both in 1950 and 1960. For vascular lesions the picture is clear for 1950 but not for 1960.

In 1950 death rates for vascular lesions were highest among Japanese in Japan, intermediate among the U.S. Japanese, and lowest in the U.S. white population; that is, the differentials were complementary to those for diseases of the heart. In the following decade there was a sharp drop in mortality from vascular lesions among Japanese Americans. There was also a decline in mortality for white Americans and for Japanese in Japan but these were much smaller. The consequence was that in 1960 death rates for vascular lesions were actually lower for Japanese Americans than for white Americans, although mortality for this cause in Japan remained well above that for either. Mortality for vascular lesions remained higher for the Japanese in Hawaii than in the continental United States in 1959-61 but, as was true a decade earlier, the differential was not very great.

Proportionate Mortality

It is possible that some deaths among Japanese in the United States were assigned to another race category. If such misassignment occurred at random, irrespective of the cause of death, the general level of mortality could be understated without any effect on proportionate mortality but with distinct effect on absolute mortality. The previous discussion was in terms of absolute death rates. It may be useful, therefore, to examine the data in table 3 in terms of the proportion of deaths assigned to cardiovascular causes to see if the picture of mortality remains unchanged.

For Japanese men in the United States the evidence of absolute and proportionate mortality in 1950 and 1960 was in accord on a low mortality for diseases of the heart; for women this was not true. Figure 1 shows this for age groups 45-64 years.

There was substantially no change between 1950 and 1960 in the percentage of deaths attributed to diseases of the heart among men in the age groups 35-74 years for the white population of the United States or for the Japanese in Hawaii or in the continental United States.

Thus, even in terms of proportionate mortality the chance of dying from heart disease remained in 1960, as in 1950, substantially less for Japanese American men than for white American men (fig. 2).

For women the picture was somewhat more complex. In the age groups 35-64 years the percentage of deaths from diseases of the heart decreased between 1950 and 1960 for the white population and for the Japanese in Hawaii, but not for the Japanese in the continental United States. In the age group 65-74 years there was essentially no change during the decade in the percentage of deaths from these causes for white persons in the United States or Japanese in Hawaii, but a decrease in percentages for the Japanese in the continental United States.

As a result, what had been a reasonably clearcut difference in 1950 between Japanese women in Hawaii or in the continental United States and white women with proportionately fewer deaths from diseases of the heart among Japanese American women, had by 1960 become a diffuse set of differentials. However, if

Table 4. Average death rates per 100,000 population for all causes and specified cardiovascular diseases by age and nativity, Japanese in the United States, 1959-61

Cause of death ¹ and age group (years)	Men		Women	
	For- eign born	Na- tive born	For- eign born	Na- tive born
All causes:				
45-54-----	506.4	445.2	459.8	342.8
55-64-----	1,247.1	950.7	787.7	512.9
Diseases of cardio- vascular sys- tem (330-334, 400-468):				
45-54-----	172.9	182.8	192.8	132.4
55-64-----	494.2	410.5	382.9	278.2
Vascular lesions af- fecting central nervous system (330-334):				
45-54-----	12.4	34.4	74.2	63.8
55-64-----	12.0	64.8	134.9	121.7
Diseases of heart (400-402, 410- 443):				
45-54-----	135.9	144.1	103.8	54.4
55-64-----	339.8	324.1	222.8	147.8
Arteriosclerotic heart disease, including cor- onary disease (420):				
45-54-----	74.1	105.4	44.5	18.9
55-64-----	231.7	280.9	138.1	69.6

¹ Numbers after causes are category numbers of the seventh revision of the International Lists of Diseases and Causes of Death.

the total United States is considered, the percentages of deaths assigned to diseases of the heart remain somewhat higher for white women than for Japanese women. In terms of absolute death rates, these differentials were very strong in 1960, just as they had been in 1950.

For white and Japanese men in Hawaii and in continental United States there was a slight

reduction between 1950 and 1960 in the percentage of deaths attributed to vascular lesions. In the process the race differentials weakened somewhat. For women the changes during the decade varied with age, race, and area, but for Japanese women in the United States as a whole the proportion of deaths attributed to vascular lesions remained higher than for white women.

Figure 1. Percentage of deaths attributed to specified cardiovascular causes, by sex for specified age groups: white population of the United States and Japanese in continental United States and Hawaii, around 1950 and 1960

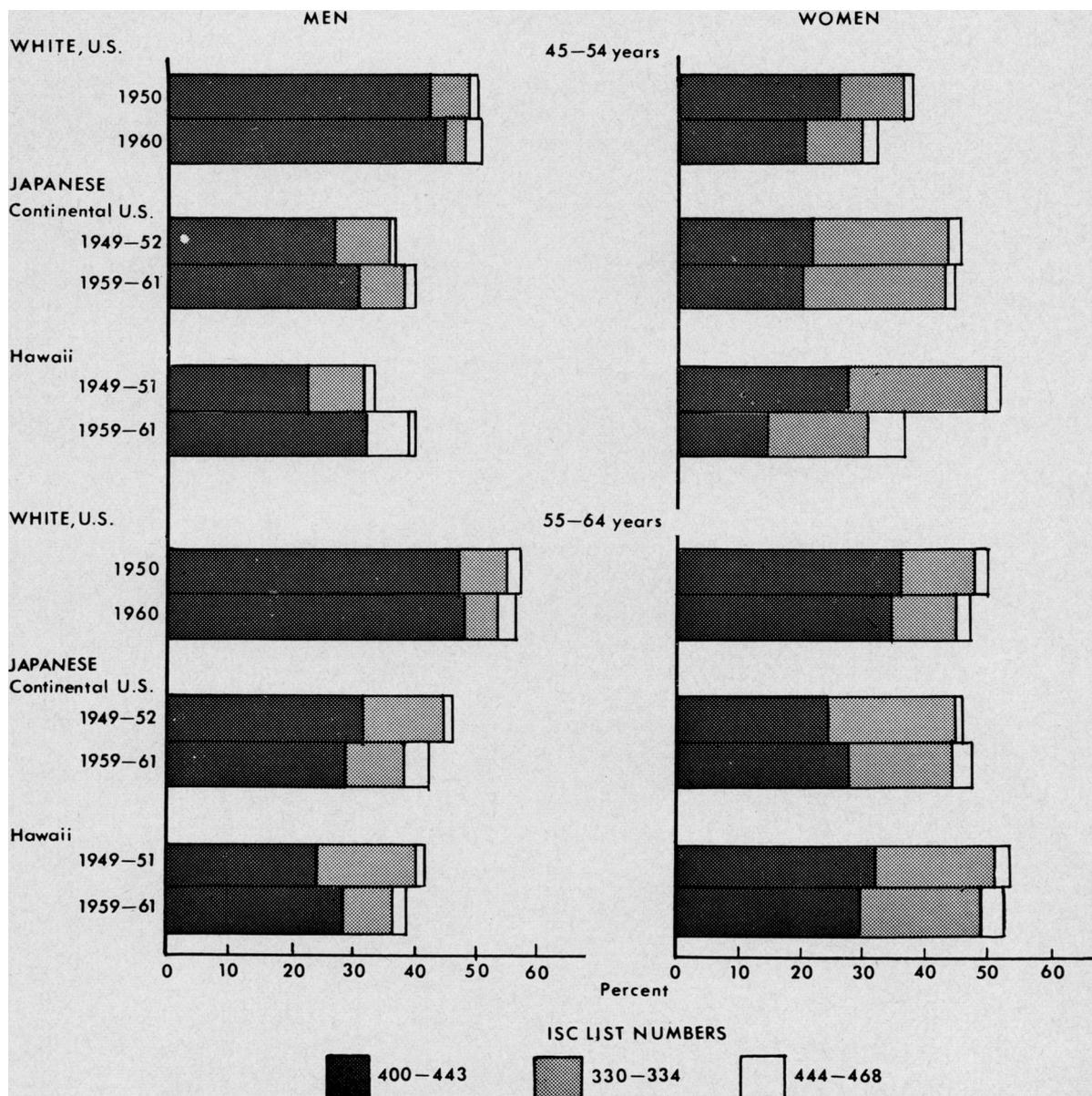
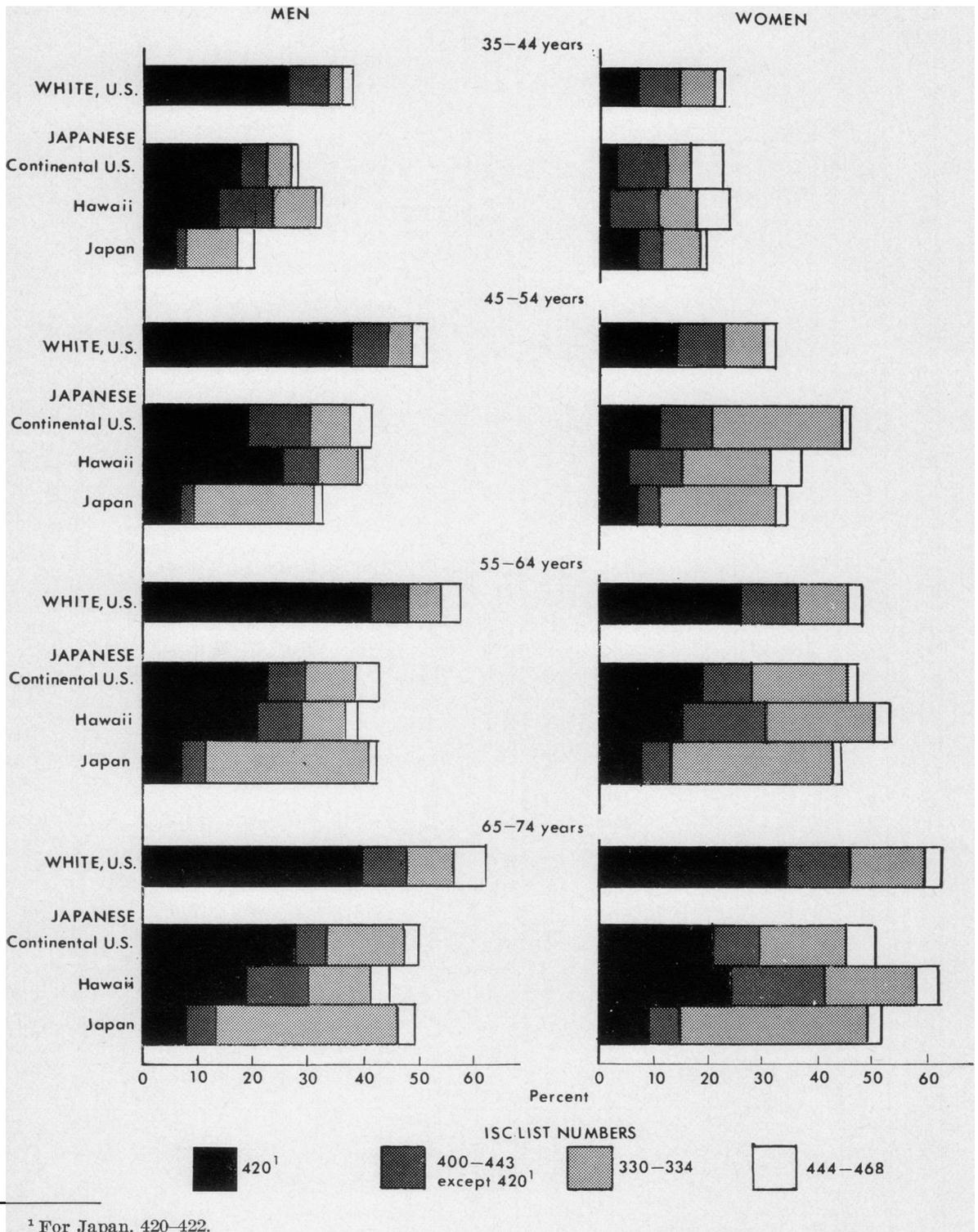


Figure 2. Percentage of deaths attributed to specified cardiovascular causes, by sex for specified age groups: white population of the United States and Japanese in continental United States, Hawaii, and Japan, around 1960



Conclusion

There are persistent differentials between white and Japanese mortality in the United States. Overall mortality is and has been more favorable for Japanese than for white persons. This could, of course, be a persistent artifact, but it is difficult to imagine an artifact that would account for all the features of the reported mortality. Nor is there any internal evidence suggesting it is unreasonable to take the main features of the data at face value.

It is conceivable, of course, that there has been a misstatement of the size of the Japanese population or the number of deaths. The first possibility seems quite remote in light of the data already adduced. Misreporting of race on the death certificate also seems unlikely. It is true that if a certificate for a Japanese person has some vague designation of race, such as "yellow," it is assigned to "other nonwhite" unless the place of birth were given as Japan. The "other nonwhite" deaths, however, are largely accounted for by specific racial groups, so that vague reporting of race would at most have a trivial effect on the number of persons dying who were reported as Japanese. In short, there is no obvious defect either in the population counts or the death counts for the Japanese in this country. However, the possibility of some artifacts in reporting cannot be completely ruled out. The size of the mortality differentials for men in the age range 25-64 years in 1959-61 was remarkable enough to be suspicious, although rates nearly as low, over a wide range of causes, are found in Norway and Sweden.

Among middle-aged Americans, Japanese men have much lower mortality for diseases of the heart than white men. This disparity was a feature of mortality for 1949-52. It became, if anything, more marked in 1959-61, but in 1959-61 mortality for most causes was substantially lower for Japanese men than white men in the United States. In terms of proportionate mortality these differentials for diseases of the heart remained unchanged during the decade.

Since mortality for diseases of the heart was even lower among Japanese in Japan than among Japanese in the United States, it was anticipated that there would be a difference in mortality between American Japanese born in

the United States and born in Japan. No such differential was found for diseases of the heart. This does not disprove the hypothesis that there is a cultural explanation for the low heart disease death rate among the Japanese in the United States, but it does weaken such an hypothesis.

There is no serious question about the low death rate for heart disease in Japan. Careful studies of the population of Hiroshima clearly demonstrate a very low prevalence (2) of coronary heart disease there. Thus, it would appear that a complementary high death rate in Japan for vascular lesions must be accepted as substantially proved unless a large number of deaths are to be shifted from cardiovascular to noncardiovascular causes. The consequences of such a shift would be harder to explain than the reported data. In any event, available autopsy findings are consistent with the reported low mortality for coronary heart disease and high mortality for vascular lesions in Japan (3).

The cardiovascular mortality reported for Japanese in the United States is not substantiated by similar evidence from morbidity studies. In general, reporting of deaths from coronary disease and vascular lesions for persons under age 65 seems reasonably accurate in this country (4). Morbidity studies now underway may eventually establish more specifically the credibility of the reported mortality for the Japanese here. The Honolulu heart program (5), for example, is studying a well-defined cohort of Japanese men born between 1900 and 1919, with a thorough followup of deaths in this cohort. This study will eventually provide solid evidence on Japanese mortality in Hawaii. According to Jack Lieberman of the Honolulu heart program, preliminary death figures from this study for 1966 seem to be close to those derived from vital statistics for 1959-61 for the same age-race-sex group in Hawaii, both for all causes and for coronary heart disease.

Therefore, no evidence is available at this point to contradict the data reported for Japanese Americans. They are internally consistent. On the point of low mortality for diseases of the heart in general and coronary heart disease in particular data for Japanese American men seems very firm, if difficult to understand.

Summary

Around 1960, as in previous decades, the Japanese in the United States had lower death rates than the white population. Indeed, the differences were even greater than they had been a decade earlier. For Japanese men aged 25-64 years the reported rate in 1960 was half that for white men.

In 1950 there had been a low death rate for diseases of the heart and a high death rate for vascular lesions affecting the central nervous system in Japanese Americans relative to white Americans. Similar but greater contrasts were evident between the Japanese of Japan and the white population of the United States. Around 1960 the Japanese American retained these differentials for diseases of the heart, mortality for that group of causes remaining intermediate between mortality for white Americans and for Japanese of Japan. The differential in mortality for vascular lesions, however, became attenuated.

There was no difference between native- and Japan-born Japanese Americans in mortality for these causes in 1960. Differences in heart

disease mortality between American Japanese resident in Hawaii and on the mainland were relatively minor when compared with their differences from white Americans, on the one hand, and the Japanese of Japan, on the other.

REFERENCES

- (1) Gordon, T.: Mortality experience among the Japanese in the United States, Hawaii, and Japan. *Public Health Rep* 72: 543 (1957).
- (2) Yano, K., and Ueda, S.: Coronary heart disease in Hiroshima, Japan. *Yale J Biol Med* 35: 504 (1963).
- (3) Jablon, S., Angevine, D. M., Matsumoto, Y. S., and Ishida, M.: On the significance of cause of death as recorded on death certificates in Hiroshima and Nagasaki, Japan. *Nat Cancer Inst Monogr* 19: 445 (1966).
- (4) Moriyama, I. M., Dawber, T. R., and Kannel, W. B.: Inquiry into diagnostic information supporting medical certificates of deaths from cardiovascular disease. *Nat Cancer Inst Monogr* 19: 405 (1966).
- (5) Trombold, J. C., Moellering, R. C., Jr., and Kagan, A.: Epidemiological aspects of coronary heart disease and cerebrovascular disease: The Honolulu heart program. *Hawaii Med J* 25: 231 (1966).

Hunter To Head HEW Information Center

J. Stewart Hunter has been appointed associate director of Information for Public Health Services of the Department of Health, Education, and Welfare.

Mr. Hunter has served as assistant to the Surgeon General and Director of Information for the Public Health Service for the past 18 years. He also served as managing director of *Public Health Reports*.

As associate director, Mr. Hunter will be Information Center officer and will spearhead the Department's continuing effort to improve its direct informational services to the public. One facet is administration of a new combined information and visitors center to be built, beginning this fall, on the first floor of the Health, Education, and Welfare headquarters building at 330 Independence Ave., SW.

Before joining the Federal service, Mr. Hunter was associate director of public relations for the J. Walter Thompson Company, Chicago. He graduated from the University of Pittsburgh and for a number of years was a member of the faculty. From 1942 to 1946 he served as a naval officer in the Pacific following brief service as an information specialist in the Office of Price Administration. Mr. Hunter is a member of the American Public Health Association and vice chairman of the National Public Relations Council for Health and Welfare Services.